

**REMARKS**

Claims 1-9 were examined and reported in the Office Action. Claims 1, 2, and 7-9 are rejected. Claim 3 is canceled. Claims 1, 8 and 9 are amended. New claims 10-16 are added. Claims 1-2, and 4-16 remain.

Applicants request reconsideration of the application in view of the following remarks.

**I. 35 U.S.C. § 103(a)**

A. It is asserted in the Office Action that claims 1, 2, and 7-9 are rejected in the Office Action under 35 U.S.C. § 103(a), as being unpatentable over Patent No. 6,189,374 issued to Adderton et al (“Adderton”) in view of U. S. Patent No. 5,652,377 issued to Yagi (“Yagi”).

It is asserted in the Office Action that the limitations of claim 3 in combination with the limitations of claim 1 are allowable. Applicant has amended claim 1 to include the limitations of claim 1. Therefore, Applicant’s amended claim 1 is allowable. Additionally, the claims that directly depend on amended claim 1, namely claims 2 and 7-8, are allowable for the same reason. Therefore, the aforementioned 35 U.S.C. § 103(a) rejection regarding claims 1-2 and 7-8 is moot.

Applicant respectfully traverses the aforementioned rejection of claim 9 for the following reasons.

According to MPEP §2142

[t]o establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. (In re Vaeck, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991)).

Further, according to MPEP §2143.03, “[t]o establish prima facie obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. (In re Royka, 490 F.2d 981, 180 USPQ 580 (CCPA 1974).” “*All words in a claim must be considered* in judging the patentability of that claim against the prior art.” (In re Wilson, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970), emphasis added.)

Applicant’s amended claim 9 contains the limitations of

scanning a sample surface using a non-contact frequency response separation scheme, said frequency response separation scheme including: sensing the sample surface based on the amplitude variation of a resonant frequency of a sensing means by keeping a uniform distance from the sample which is moving in X and Y directions; transforming the sensed signal to a first signal in a form of frequency; combining the first signal and a second signal outputted from a frequency generator to generate combined signal, wherein the second signal is identical to a resonant signal and is a higher frequency compared to the first signal; transferring the combined signal to a single actuator through a feedback loop; and actuating a cantilever in the sensing means in response to the first signal which is a low frequency compared to the second signal and executing the frequency response separation by providing the combined signal to the sensing means to actuate the cantilever selectively at the second signal, wherein actuating the cantilever functions as a low pass filter by responding to the first signal.

Adderton discloses atomic force microscopes (AFMs) that combine an AFM Z position actuator and a self-actuated cantilever to provide images. Adderton further discloses AFM 10 operates at a force that is determined by a combination of a first signal having a setpoint value and a cantilever detection signal generated by deflection detector 30. A difference amplifier 32 receives and subtracts the setpoint signal from the cantilever deflection signal to generate an error signal. The error signal is transmitted to a controller 34. Controller 34, in response to the error signal, generates a control signal and transmits the control signal to a piezoelectric element 36 disposed on self-actuated cantilever 20. Adderton, however, does not teach, disclose or suggest

actuating a cantilever in the sensing means in response to the first signal which is a low frequency compared to the second signal and executing the frequency response separation by providing the

combined signal to the sensing means to actuate the cantilever selectively at the second signal, wherein actuating the cantilever functions as a low pass filter by responding to the first signal.

Yagi discloses a scanning probe microscope where surface information or a magnetic force distribution of a surface of a sample is obtained with a scanning probe. Yagi further discloses the piezoelectric actuator 5 vibrates the cantilever 2 in a direction perpendicular to the measurement sample 3 in a predetermined frequency  $f$  on the basis of an oscillating signal output from the z-axis modulation signal generator 4. Yagi, however, does not teach, disclose or suggest

actuating a cantilever in the sensing means in response to the first signal which is a low frequency compared to the second signal and executing the frequency response separation by providing the combined signal to the sensing means to actuate the cantilever selectively at the second signal, wherein actuating the cantilever functions as a low pass filter by responding to the first signal.

Therefore, even if Adderton and Yagi were combined, the resulting invention would still not teach, disclose or suggest the limitations contained in Applicant's amended claim 9, as listed above. Since neither Adderton, Yagi, and therefore, nor the combination of the two, teach, disclose or suggest all the limitations of Applicant's amended claim 9, Applicant's amended claim 9 is not obvious over Adderton in view of Yagi since a *prima facie* case of obviousness has not been met under MPEP §2142.

Accordingly, withdrawal of the 35 U.S.C. § 103(a) rejection for claim 9 is respectfully requested.

## **II. Allowable Subject Matter**

Applicant notes with appreciation the Examiner's assertion that claims 3-6 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Applicant has amended claim 1 to include the limitations of claim 3. Additionally, Applicant has added new claim 10, which corresponds to claim 4 re-written in independent form.

Applicant respectfully asserts that claims 1-2 and 4-16, as they now stand, are allowable for the reasons given above.

**CONCLUSION**

In view of the foregoing, it is believed that all claims now pending, namely 1-2 and 4-16, patentably define the subject invention over the prior art of record and are in condition for allowance and such action is earnestly solicited at the earliest possible date.

If necessary, the Commissioner is hereby authorized in this, concurrent and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2666 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17, particularly extension of time fees. If a telephone interview would expedite the prosecution of this Application, the Examiner is invited to contact the undersigned at (310) 207-3800.

**PETITION FOR EXTENSION OF TIME**

Per 37 C.F.R. 1.136(a) and in connection with the Advisory Action mailed on March 22, 2006, Applicant respectfully petitions the Commissioner for a one (1) month extension of time, extending the period for response to March 30, 2006. The Commissioner is hereby authorized to charge payment to Deposit Account No. 02-2666 in the amount of \$60.00 to cover the petition filing fee for a 37 C.F.R. 1.17(a)(1) small entity. A duplicate copy of this sheet is enclosed.

Respectfully submitted,

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Dated: March 29, 2006

By:   
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**CERTIFICATE OF MAILING**

I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail with sufficient postage in an envelope addressed to: Mail Stop RCE, Commissioner for Patents, P. O. Box 1450, Alexandria, Virginia 22313-1450 on March 29, 2006.

  
Jean Svoboda